

**REPORT**

OF THE

**PRESIDENT AND MANAGERS**

OF THE

**Danville and Pottsville Rail Road  
Company,**

TO

**THE STOCKHOLDERS.**

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*JANUARY, 1839.*

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**Philadelphia:**

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.....

**1839.**

REPORT

OFFICE

THE PENNSYLVANIA DEPARTMENT OF EDUCATION

REPORT ON THE STATE OF THE DEPARTMENT

FOR THE YEAR 1918

REPORT OF THE COMMISSIONER

TO THE BOARD OF EDUCATION

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TO THE BOARD OF EDUCATION

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FOR THE YEAR 1918

# OFFICERS

OF THE

**Danville and Pottsville Rail Road Company,**

**FOR 1838-9.**

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At a meeting of the Danville and Pottsville Rail Road Company, held on the first Monday in May, 1838, the following officers were elected for one year.

**Benjamin W. Richards, *President.***

## MANAGERS.

John White.	Cheyney Hickman.
Isaac Lea.	Joseph Solms.
Robert Toland.	Philip H. Nicklin.
John Grigg.	George Handy.
Abraham Ritter.	Robert B. Davidson.

**Samuel H. Carpenter, *Treasurer.***

**Thomas Sharp, *Superintendent.***

REPORT

At a meeting of the President and Managers of the Danville and Pottsville Rail Road Company, held on the 22nd of September, 1838, Philip H. Nicklin, Isaac Lea and Benjamin W. Richards were appointed a committee to draw up a Report to be addressed to the Stockholders; and at a meeting held on the third of January 1839, the said Committee submitted to the Board of Managers the following Report, which was unanimously approved and ordered to be printed.

**B. W. RICHARDS, *President***

of the Danville and Pottsville Rail Road Company.

# REPORT

OF THE

*President and Managers of the Danville and Pottsville  
Rail Road Company, to the Stockholders.*

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*The present condition of the road :—*The Company possesses a good landing at Mount Carbon which joins the south end of the Mount Carbon Rail Road. Attached to this landing are coal yards and chûtes and skreening apparatus of the best construction for discharging coal from the wagons into the boats. Near the landing are, a good dwelling-house, a large stone store-house, and some valuable lots of ground. The north end of the east branch of the Mount Carbon Rail Road joins the beginning of our rail-road near Wadeville, three miles N. E. of Mount Carbon.

The mountain summits which intervene between Pottsville and the Girard Coal Mines are overcome by five inclined planes and one tunnel. The foot of plane No. 1 is distant from Mount Carbon three miles and 3857 feet : its length is 667 feet, its height 105 feet, and its angle of elevation is nine degrees. A little beyond the head of this plane is the tunnel, the centre of which is four miles from Mount Carbon : it is 800 feet long, and is handsomely arched with brick, and faced with substantial stone masonry.

The foot of plane No. 2, is one mile and 1391 feet distant from the centre of the tunnel ; it is 807 feet long, 202 feet high, and its angle of elevation is 14 degrees.

The foot of Plane No. 3 is distant from the foot of Plane 2, one mile and 3209 feet : it is 550 feet long,

159 feet high, and its angle of elevation is 16 degrees.

The foot of plane No. 4 is distant from the foot of Plane 3, 5000 feet: it is 861 feet long, 147 feet high, and its angle of elevation is nine and three quarter degrees. These four planes all pitch towards Pottsville, and require no steam power to work them; the weight of the descending coal being sufficient to raise the returning wagons. They work with endless chains, and the machinery is well constructed and in good order. The three intervals of rail road between these planes have a descending grade towards Pottsville, of 20 feet to the mile; so that they are well suited to horse power.

The head of Plane No. 5, commonly called the Mahonoy Plane, is distant from the foot of plane No. 4, one mile and 4059 feet: it is 1625 feet long, 345 feet high, and its angle of elevation is 12 degrees. As this plane pitches from Pottsville, the coal from the Girard mines has to ascend it: therefore a stationary steam engine has been placed at its head, turning a large drum, which raises the loaded wagons and lowers the empty ones by means of a cut rope. The fuel used in this engine is coal from the Girard mines. The engine is of ninety-horse power, and is capable of raising 200,000 tons per annum.

At the distance of 3412 feet beyond the head of Plane 5, is a Tunnel which has been driven into Bear Ridge, with a view of reaching the numerous beds of coal in the Girard lands. The Tunnel is now one hundred and twenty yards long, and it is calculated that eighty yards more will bring it to a very large bed of excellent coal. The cost would be seventy dollars per yard. Opposite to the mouth of the Tunnel is an extensive stage of timber furnished with many chûtes and skreens, conveniently arranged

for loading the coal. Near here, are some miners' houses, and a large workshop, in which is a considerable amount of property, consisting of castings, timber cut out for wagon frames, and other matters useful for rail-road purposes.

The distance from the Tunnel to the junction with the Mount Carbon Rail Road is six miles and three quarters of a mile. This portion of the Danville and Pottsville Rail Road, with its *five Inclined Planes*, has been in successful operation during parts of the years 1834-5-6. "There were 290 tons of coal transported over them (*the Planes*) at the opening of the Rail Road in the fall of 1834; 6,200 tons of coal and 493,705 feet of lumber in 1835; and 12,304 tons of coal, and 400,000 feet of lumber, and 1300 cross ties in 1836." See Report of Mr. Superintendent Sharp, 1838, page 4.

A large and profitable business might have been done during 1837-8, if the Company had possessed funds to have finished the Tunnel, and placed on the road a sufficient number of coal wagons and lumber trucks to have carried it on.

From the head of Plane No. 5, to the head of Plane No. 6, the distance is two miles and 2181 feet: Plane 6 is 884 feet long, 166 feet high, and its angle of elevation is  $10\frac{3}{4}$  degrees. This Plane was intended by Mr. Robinson to be worked by water tanks; and a stream of water has been led to the head of the Plane through logs, to fill the tanks. A number of iron tanks are at the Plane. The superstructure of the road extends 3360 feet beyond the head of the plane, or, to within 600 feet of Girardville. The grading is done three miles farther.

The North Western division of the road, beginning on the bank of the Susquehannah in Sunbury is finished

for more than twenty miles and a half; extends two miles and a quarter into the Shamokin coal field, and has five lateral branches, one of which is four miles long. The opening of this important part of the road was celebrated on Wednesday the 15th of August last, and on the following day the locomotive engine North Star began to make daily trips with a train of wagons carrying coal from the Shamokin mines to Sunbury. From that period until the interruption of the navigation three thousand seven hundred and forty-six tons of coal have been carried from Shamokin to Sunbury, and shipped on the Susquehannah, and 178 tons of merchandize have been carried up to Shamokin during the same period. Anthracite coal is used for fuel in this engine, which takes down at one trip forty wagons loaded with one hundred tons of coal, and takes the empty wagons back.

On the bank of the Susquehannah at Sunbury are two chûtes for discharging the coal from the wagons into the boats in the river. At this end of the road are a turning platform, a water station, a car-house, and a set of scales capable of weighing ten loaded wagons at once. There is a second water station at Bird's, twelve miles from Sunbury, and a third at Shamokin, nineteen miles and a half from Sunbury.

Shamokin is a town, created by the magic of American enterprize, in the heart of what was a short time since an untouched forest. It has its hotel, its stores, its boarding-houses, its rail-road, and its depôt. There are here a turning platform, a large engine house, and a workshop furnished with a stationary steam engine. From the Shamokin mines to Sunbury the road has a descending grade, well adapted to locomotive power. Seven furlongs of the road near Shamokin descend at the rate of fifty-three feet.

per mile; and then occur six furlongs having a grade of thirty-nine feet per mile; on the remainder of the road to Sunbury, the grades are easy, varying from four to twenty-eight feet per mile. As the heaviest grade is short, and not very steep, it cannot expose the trains to much danger.

The Company possesses one hundred and thirty coal wagons capable of carrying two and a half tons each, one hundred and ten of which are in use between Shamokin and Sunbury; also three large passenger cars and many timber trucks. Thus, it appears, that nine miles of road, and six inclined planes on the eastern division are finished and in good working order; and twenty and a half miles at the western end are finished and in actual operation, and drawing income for toll and transportation of coal and other commodities. Between the eastern and western divisions, there is an interval of road thirteen miles long, yet to be made; of which the eastern three miles are graded.

The cost of the work done is as follows:

Amount actually expended in the construction of the whole work, from the commencement up to the present time, including damages, salaries of engineers, tunnel at coal mines, locomotive engine, cars, two stationary engines, &c., &c.	\$592,880 99
Cost of rail road iron	48,501 70
Cost of landings at Pottsville, and other real estate	18,258 32

Making a total amount of \$659,641 01

*Prospects of the Road:* — It is estimated that the unfinished interval of thirteen miles, can be completed

with a single track, for the sum of one hundred and seventy thousand dollars; making, with six hundred and fifty-nine thousand six hundred and forty-one dollars, the sum already expended, a total amount of eight hundred and twenty-nine thousand six hundred and forty-one dollars, as the whole cost of the road. To make an annual dividend of six per cent. on this amount, will require a clear annual gain of forty-nine thousand seven hundred and seventy-eight dollars forty-six cents. The following items of business may be counted upon with some degree of certainty in three or four years:

Toll and transportation on 200,000 tons	
of coal carried from the Shamokin	
Mines to Sunbury, an average distance of 20 miles, at 3 cents per ton	
per mile, is	\$120,000 00
Deduct seven-eighths* of a cent per ton	
per mile, for transportation,	35,000 00
Net gain per annum on the transportation of coal on the western section of the road,	\$85,000 00

\* See Estimate No. 1, at the end of this report. It will be perceived by those who have read the last report of the Philadelphia and Reading Rail Road Company, that there is a great difference in the estimated cost of transportation on the two roads: their estimate being fifty-six hundredths of a cent per ton per mile, and our's being nearly seven-eighths, or eighty-five hundredths of a cent per ton per mile, which is about fifty-two per cent. higher than their's. This disagreement arises from a difference in the measure and mode of the estimates. They calculate the annual repairs and depreciation of engine and tender, and cars, at twenty-five per cent.; we at thirty per cent.: they apply their ratio to the number of ears forming one train; we apply our's to three times the number. If their estimate be the more correct, our profits will exceed our calculation.

Brought forward \$85,000 00

A considerable tonnage will go in the return trains to Shamokin, consisting of groceries, dry goods, and limestone. The last mentioned article will be sent to Shamokin in large quantities, to be burnt into lime with the refuse coal, for the purposes of building, and manuring the land. Some persons estimate the quantity of this article at 100,000 tons. We think however, that the whole upward trade may be fairly calculated at 50,000 tons, at 60 cents per ton

30,000 00

The coal produced from the Girard Mines will probably, in three or four years, amount to 200,000 tons per annum, which in going to Pottsville would pass six and three quarter miles of our road, yielding a toll of four cents per ton per mile,

54,000

Cost\* of passing the five planes at five cents per ton 10,000

Do. of carriage† at 1¼ cts. per ton per mile

for 6 miles 16,875

———— 26,875

———— 27,125 00

The passengers may be estimated at 20 per day each way, or 12,500 per annum, at \$1,50 each

18,750

Deduct cost of carrying passengers at 20 cents each

2,500

———— 16,250 00

Shewing an annual net profit of \$158,375 00

\* See Estimate No. 2.

† This allowance is for horse power.

The entire cost of the whole road being estimated in round numbers at eight hundred and thirty thousand dollars, and seventy thousand dollars being added for increasing sufficiently the number of locomotives and wagons, and unforeseen expenses, we have a total of nine hundred thousand dollars; upon which, the profits as estimated above, would enable the company to declare an annual dividend of twelve per cent., still leaving an annual surplus of \$50,375; which would be amply sufficient to keep the road in repair, and meet all other contingencies.

It is not supposed that the results of the foregoing estimate will be realized immediately, but the Board believe they will be fully arrived at in four years from this time. The gentlemen working the Shamokin collieries, expect to send to Sunbury from forty to sixty thousand tons of coal during the present year; the average of which, with ten thousand tons of return freight, would yield a net profit of \$25,000. And it is not unreasonable to suppose that this business will be doubled, trebled, and quadrupled in the three succeeding years respectively, when we contemplate the extensive market that will be opened by the tide-water canal of the Susquehannah.

In addition to the above, a considerable quantity of lumber will be carried from the Girard Lands over the eastern section of road to Pottsville, especially in the shape of props for coal mines. The timber in the neighbourhood of Pottsville is rapidly disappearing, and its price as rapidly increasing; and the quantity wanted for props is increasing in proportion to the rapid extension of mining operations. We may also reckon upon the transportation over the whole road from Sunbury to Pottsville, of large quantities of hay, straw, oats, and other farm produce, and considerable

quantities of flour and iron, from the rich and cheap country on the Susquehannah, to the increasing market of Pottsville. Such a trade will certainly take place on the only avenue connecting Pottsville with a cheap country. Flour is now sent to Pottsville from the branches of the Susquehannah via Middletown and Reading, through the Union Canal; and hay is carried from Sunbury on the Centre turnpike across the mountains. The mining interest of Pottsville will derive from this new source of cheap provisions, a benefit that will greatly outweigh any injury that may arise from the competition of the Girard Coal Mines. In the foregoing calculation, nothing is added for the profit to be derived from these sources; but they may be considered as forming a sort of reserved fund, to make good any deficiencies in the other branches of estimate.

By its geographical position, this road forms a natural and important link in the great chain of Rail Road between Philadelphia and Erie; and when the Erie and Sunbury Road shall be finished, we may fairly conclude, that a great increase of business will take place on the Danville and Pottsville Road, in passengers in both directions, and in merchandise from Philadelphia to the great west. It is objected by some, that the necessity of employing five or six inclined Planes in crossing the Broad Mountain, renders our road unfit to form a part of the great line of Rail Road which is to connect Philadelphia with Erie; and a company whose road strikes the North Branch of the Susquehanna, twenty miles above its confluence with the West Branch, in a report published last summer, says of its own road, "It is believed to be the nearest and best feasible rail-road communication between

the city of Philadelphia, and the *North* and *West* branches of the Susquehannah, the main line is free from *inclined planes*, those fruitful sources of vexatious detention and accident.”—“The steepest grade to be ascended in the direction of the preponderating trade, in no instance exceeding *thirty-three feet per mile*.” And on page 14 of the same report it is said: “It will not, we trust, be deemed invidious to remind our Stockholders of the fact, that the *Catawissa route is wholly divested of inclined planes*, whereas there are nine to be encountered on the line of communication\* above designated.”†

We humbly hope that it will not be deemed invidious, if we remind our stockholders and the *Public*, that the Danville and Pottsville Rail road has *no ascending* grade in the direction of its preponderating trade; that it is the *shortest*, best and safest rail road communication to the *confluence* of the two branches of the Susquehannah, and consequently to the commencement of the Sunbury and Erie Rail Road; that it has not seven lattice bridges from forty to a hundred and twenty feet high, of two hundred feet span between the piers, nor a descending grade in the direction of its preponderating trade, of sixty-six feet per mile for nine consecutive miles. Its location is so happy with respect to the richest coal field in the state, that its preponderating trade will be drawn from its own bosom, and (with the exception of a part ascending the Mahanoy Plane,) will descend in both directions. With regard to the felicity of its location and other advantages, we quote the following passage of a letter from Moncure Robinson, Esquire, to B. W.

\* Meaning the Danville and Pottsville Rail Road.

† Report of the Little Schuylkill and Susquehannah Rail Road Co.

Richards, Esquire, President of the Danville and Pottsville Rail Road Company: "It appeared to me that it had a sure and largely increasing business to reckon on, in the supplies for the coal region, (which would naturally be drawn from the fertile country on the Susquehannah,) and the growing trade of the rich mineral region which was *traversed by it*. In this last respect the Danville and Pottsville Rail Road is *unrivalled by any other work*. The improvements of the Hudson and Delaware, and Lehigh companies, and even that of the Little Schuylkill, *terminate in*, but *do not pass through* coal fields, whilst the Danville and Pottsville Rail Road for more than one half its length passes through a continuous body of anthracite coal of the most superior description." And the following observations from a letter from the same gentleman, dated 10th of November, 1835, addressed to Merritt Canby, Esquire, "In reply to your inquiries I have to observe, that *the Summit* or dividing ground between the waters of the Schuylkill and those of the Susquehannah, on the line of the rail road between Pottsville and Sunbury, is lower than any other route surveyed by me in 1828, and one hundred and fifty-one feet lower than that on the Cattawissa route." "In regard to your inquiry whether inclined planes can be avoided on the Cattawissa route, I have to say, that they can be avoided on that route, only as they can be on *any* route; that is to say, by grading the whole ascent and descent to be overcome. I did not at the time of making my surveys deem this a judicious course, and should not now. I proposed at that time five or six inclined planes on the Cattawissa route, and adopted nine in my location between Pottsville and Sunbury. As to distance; this will probably be about the same from Port Clinton (the point of sepa-

ration of the two lines) to Sunbury, and from Port Clinton to Cattawissa. Of course the advantage in regard to distance to the *confluence* of the two branches of the Susquehannah would be in favour of the route by way of Pottsville."

Six of the nine planes, adopted by Mr. Robinson for the Pottsville and Sunbury route, are made, and five of them were in operation for parts of three years: it is now supposed that the road may be finished without making any more inclined planes, and also that the use of Plane No. 6 may be dispensed with in the principal business of the road, by changing the location of the unfinished portion of the road.

Experience is rapidly removing the prejudice against inclined planes on routes where great elevation is to be overcome in a short space. The *ten* inclined planes of the Allegheny Portage Rail Road have been found sufficient to transport speedily and safely over the great Allegheny Ridge, the immense quantity of merchandize and the great number of passengers that annually pass on that great route between Philadelphia and Pittsburgh: and let it be observed that these ten planes, (although of much greater magnitude and of more dangerous elements than our's, all being worked by stationary engines,) do not seem to be the slightest impediment to passenger travelling; for many lines for the transporting of passengers, pass them daily in both directions. In order to show at a glance, how much more formidable is the obstacle presented by the Allegheny Portage Planes, we give the two following tables, the first of which exhibits the height, length, and inclination of our six planes; and the second gives the same elements of the ten Planes on the Allegheny Portage.

**TABLE I.***Planes on the Danville and Pottsville Rail Road.*

No.	Elevation.	Length.	Inclination.
1	105 feet	667 feet	9 degrees
2	202 "	807 "	14 "
3	159 "	550 "	16 "
4	147 "	861 "	9 $\frac{3}{4}$ "
5	345 "	1625 "	12 "
6	166 "	884 "	10 $\frac{3}{4}$ "
	"	"	
Total rise and fall	1124 "	5394 "	Total length of Planes.

**TABLE II.***Planes on the Allegheny Portage Rail Road.*

No.	Elevation.	Length.	Inclination.
1	150 feet	1607,74 feet	5° 42' 28"
2	132,40 "	1760,43 "	4 34 26
3	130,50 "	1480,25 "	5 25 36
4	187,86 "	2195,94 "	5 8 34
5	201,64 "	2628,60 "	4 34 26
6	266,50 "	2713,85 "	5 51 9
7	260,50 "	2655,01 "	5 51 9
8	307,60 "	3116,92 "	5 51 9
9	189,50 "	2720,80 "	4 8 48
10	180,52 "	2295,61 "	4 42 58
	"	"	
Total rise and fall	2007,02 "	23175,15 "	Total Length of Planes.

The tables show the total rise and fall of the planes on our road to be 1124 feet ; and the rise and fall of those on the Allegheny portage to be 2007 feet, or nearly double the former : they also shew the total length of our planes to be 5394 feet, and the total length of the Allegheny Portage Planes to be 23175 feet, or considerably more than four times the length of the former. In these two respects, it requires no argument to prove the great advantage of our road. If the ten gigantic planes on the Allegheny Portage, all worked by the complicated apparatus of endless ropes and stationary engines, afford a safe and speedy transit across the mountain, for the immense trade and the army of passengers constantly passing between Philadelphia and Pittsburgh ; no reasonable doubt can exist of the capability of our six planes, of half the height and one quarter of the length of the others, to perform a similar work with even greater expedition and safety.

As some persons have lately suggested that steep grades are preferable to inclined planes, we here quote a passage from a report made to the Board of Managers by our intelligent and experienced superintendent, Mr. Sharp :—"I have very frequently been asked, could not these planes have been avoided ? I answer in the negative.—From Mount Carbon to the summit, the distance is seven and three quarter miles, the height to be overcome is nine hundred feet. Then taking Pottsville as a starting point, even if an uniform grade could have been had, a rail road thirty miles long would have been necessary at a grade of thirty feet per mile, or twenty-two and an half miles long at a grade of forty feet per mile, to overcome this elevation. But it is evident, that even with this great increase of distance, an uniform grade could

not have been had, and that a grade of at least one hundred feet per mile would have been necessarily encountered in any attempt to make a road to the summit without planes. On such a road, setting aside the increased expense of making and keeping up a road of such increased length, it is obvious that horse power only could have been used, and that horse power would have done but very little—for although locomotive engines can be used in such steep grades with high steam, and in a favourable state of the rails, *as a matter of experiment*, it is certain that they cannot be advantageously employed *at any time*, and cannot be used at all when the rails are frosted or slightly wet. These views go to show that the planes could not have been dispensed with on the east side of the mountain; it is a still clearer point, that they could not have been in descending from the summit to the City mines. Here the descent of 345 feet is effected with a single plane, by an engine capable of raising 200,000 tons of coal at an expenditure of less than \$5000, or under  $2\frac{1}{2}$  cents per ton. It is obvious that if this descent had been effected by a graded road of ten miles, having a descent of  $34\frac{1}{2}$  feet per mile; or of fifteen miles having a descent of 23 feet per mile, at the lowest rate of transportation on ascending grades, the cost of this last on the graded road ascending from Girardsville, must have been at least ten times what it is on the plane.

“These simple views go to show, that whatever was to be the disadvantage of inclined planes on roads to accommodate passengers, or where the elevation is not too great to be overcome by tolerable grades, such a road was out of the question across the Broad Mountain, if there was any intention of bringing coal from the Girard Mines to the city; and the plan of

the road as it is, is much the best, and indeed the only one that could have been adopted across the Broad Mountain, that would have been worth any thing for transporting minerals or agricultural products."

We consider the reasoning in the foregoing quotations as conclusive, and with it dismiss the subject of inclined planes; only observing, that if we were inclined to hazard a prediction, it would be, that a little more experience will greatly diminish the prejudices at present existing against "*those fruitful sources of vexatious detention and accident.*"

The State of Pennsylvania is deeply interested in the speedy completion of the Danville and Pottsville Rail Road: First; because the state holds stock in the road to the amount, at par, of eighty-five thousand dollars: Secondly; because the state has guaranteed the payment of, and actually pays the interest on \$300,000, borrowed by the Company, for which annual payments the state receives stock in the road at par; so that the amount of stock held by the state is annually increasing, without any present return. Let the road be finished; and the stock would soon rise above par in the market, the Company could pay off its loans, thus cancelling the state guarantee, and the state could either receive remunerating dividends, or have her advances returned with a profit by selling her stock: Thirdly; the State Treasury would be enriched by the tolls on the great quantity of coal that would pass through that part of the state canal between Sunbury and Columbia. The distance is eighty-two miles, and the toll on coal for the whole distance forty-one cents per ton; on a trade of 200,000 tons, the sum that would flow annually into the treasury from this new source would be \$82,000. The trade from the river and its branches to

Sunbury, occasioned by the consumption of the increasing population of the Shamokin coal-field, would also swell the revenue of the state.

The speedy completion of this road is a matter of great moment also to the City of Philadelphia. The city is the owner of stock in the road amounting at par to two hundred thousand dollars, and is also the proprietor of thirty thousand acres of land, rich in timber and coal of the best quality, through which the road will pass when finished. Were the road finished, the city would soon derive an annual income from its stock, of twenty-four thousand dollars. And the income to be derived from the sale of the right to cut timber, would soon be very considerable. Sixty and seventy dollars an acre, are paid near Pottsville for the privilege of cutting timber; and a similar amount will soon be obtainable for the right of cutting on the Girard-Lands. The timber grows again in sixteen or seventeen years, or twenty at most; so that if a twentieth part were cut annually, at fifty dollars per acre, the city would derive therefrom a perpetual annuity of seventy-five thousand dollars. But putting out of view the direct profit of the City Treasury, the speedy completion of this road is much to be desired by Philadelphians, because it will bring their trade within a day's journey of the confluence of the two branches of the Susquehannah, and in connection with the Sunbury and Erie Rail Road will keep open at all seasons of the year a direct and speedy communication with the great west.

All which is respectfully submitted.

PHILIP H. NICKLIN.

ISAAC LEA.

B. W. RICHARDS.

Philadelphia, January, 1839.

*Committee.*

## No. 1.

*Estimate of the Annual Cost of running One Engine and train of Twenty-five Cars.*

Engineer's pay, sixty dollars per month	720
Fireman's pay, at 1.25 per diem, for 300 days	375
Fuel for two trips up and down per diem $1\frac{1}{2}$ tons, or 450 tons per annum	675
Three gallons of oil per diem, for 300 days, at 90 cents per gallon	810
Repairs of engine and tender, and 75 cars, each carrying four tons, estimated at thirty per cent. on first cost; the cost of engine and tender being 7000 dollars—and that of one car being 220 dollars	7050
Wages of two men with train at one dollar per day	600
	<hr/>
	<u>\$10,230</u>

Making a total of \$10,230 ; which being divided by 60,000, the number of tons that can be transported in a year by one engine, gives  $17\frac{1}{20}$  cents per ton for twenty miles, which is eighty-five-hundredths, or nearly seven-eighths of a cent per ton per mile.

## No. 2.

*From Mr. Sharp's Report to the Managers, made in January, 1838.*

Estimated Expense of the Transportation and Repairs of the Inclined Planes between the Girard Mines and Pottsville.

*Mahanoy Plane.*

Expense of Rope per annum,	\$1000 00
2 Engineers for 34 weeks at \$20 per week,	680 00
6 Men and 2 Boys as Plane Tenders at \$48,	1632 00
20 Tons of Coal per week for engine, at \$1 per Ton for 34 weeks	680 00
Expense of Machinery for 34 weeks at \$20	680 00
	<hr/>
	\$4672 00

Expense of Planes No. 1, 2, 3 & 4, each 2 Men at \$7,50 per week, each for 34 weeks,	\$510 00
Exp. of Machinery for 34 weeks,	200 00
	<hr/>
	\$710 00

4 Planes at \$710 each	2840 00
Superintendence for the Road and all the Planes,	1500 00
	<hr/>
	\$9012 00
	<hr/>

The above is estimated as the Expense of  
Transporting over the Planes 5760 Tons  
per week, or 960 Tons per day, making in  
34 weeks 195,840 Tons at 5 cts. per Ton is \$9792 00  
As above of keeping up and working the  
Planes,

Leaving a Balance for contingencies, of	\$780 00
	<hr/>

